

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS**

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**EX PARTE KRYUCHKOV**

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**Application for Patent**

**Filed September 29, 2003**

**Application No. 10/674,884**

**FOR:**

**3-D REELS AND 3-D WHEELS IN A GAMING MACHINE**

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**APPEAL BRIEF**

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## **I. REAL PARTY IN INTEREST**

The real party in interest is IGT, the assignee of the present application, having an address at 9295 Prototype Drive, Reno, Nevada 89521.

## **II. RELATED APPEALS AND INTERFERENCES**

There are no known related appeals, interferences, or judicial proceedings that may directly affect, be directly affected by, or have a bearing on the Board's decision in the pending appeal.

## **III. STATUS OF CLAIMS**

There are a total of 41 claims pending in this application, namely claims 39, 41-45, 48-66, and 75-90. No claims have been allowed.

Claims 39 and 75 are independent. Claims 41-45 and 48-66 depend directly or indirectly from independent claim 39, while claims 76-90 depend directly or indirectly from independent claim 75. Claims 1-38, 40, 46-47, and 67-74 have been canceled during prosecution.

Claims 39, 41-45, 48-50, 54-57, 60-64, 66, 75-84, and 86-90 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ellis (WO 02/32521 A1) ("Ellis").

Claims 51-53, 58-59, 65, and 85 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ellis in view of Gauselmann (U.S. Pub. No. 2004/0048657) ("Gauselmann").

Claim 60 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ellis in view of Abbott (U.S. Patent No. 7,179,166 ) ("Abbott").

All rejections of all claims are appealed in this brief.

## **IV. STATUS OF AMENDMENTS**

The final rejection of February 20, 2008 was in response to amendments received December 12, 2007 as indicated in the final rejection. The claims attached in the Claims

Appendix and argued for herein reflect the claims submitted December 12, 2007, which are shown in PAIR.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The invention relates to game presentation methods for gaming machines such as slot machines and video poker machines. More particularly, the present invention relates to apparatus and methods for displaying game presentations derived from a 3-D gaming environment.

Displaying game presentations derived from a 3-D gaming environment is described generally on pages 3:23-31 and 4:1-2 of the specification as filed, which recite,

*While a game of chance is being played on the gaming machine, two-dimensional images derived from a 3-D object in the 3-D gaming environment may be rendered to a display screen on the gaming machine in real-time as part of a game outcome presentation. Apparatus and methods are described for generating and displaying a sequence of symbols from a virtual reel strip in the 3-D gaming environment. In particular, the sequence of symbols may be mapped one or more to flat reels, rounded reels or sequences of moving objects in the 3-D gaming environment. The flat reels, round reels or sequences of moving objects may be moved in the 3-D gaming environment through a motion that allows the sequence of symbols from the virtual reel strip to be displayed as part of game outcome presentation for a game of chance played on the gaming machine.*

Certain advantages of generating a 3-D gaming environment that may be rendered in real-time to a display are described on page 31:12-32 of the specification, as follows:

*With the present invention, some advantages of generating a 3-D gaming environment that may be rendered in real-time to a display screen are as follows. First, it allows a player to be presented and possibly control a complex game outcome presentation in real-time. Thus, the game outcome presentation may be varied from game to game in a manner determined by the player. Traditional game outcome presentations have been modeled in 2-D and little control has been given to the player. Thus, traditional game outcome presentations do not vary much from game to game. Second, screen resolution issues associated with presenting a large number of games simultaneously on a single screen may be avoided by modeling the games in 3-D gaming environment.*

*At any given time during a game presentation viewed on a display screen on the gaming machine, only a portion of the plurality of the games modeled in the 3-D gaming environment may be visible to the player. Thus, a game playing are in a 3-D gaming environment is greater than a 2-D gaming environment because a game of chance may be presented on surfaces modeled in the 3-D gaming environment that may be hidden from view. In a 2-D gaming environment, there are not any hidden surfaces i.e. “what you see” is “what you get.” Since the viewpoint in the 3-D model may be varied, the player or gaming machine may zoom-in on one or more games of interest, some of which may be hidden in a current 2-D view, and select a desirable resolution level. Thus, all of the games or game components do not have to be rendered on a single screen simultaneously.*

The general concept of displaying a portion of a 3-D gaming environment on a display screen is further described, for example, with respect to the specific example embodiment of FIG. 1 and on pages 24:27-32 and 25:1-3 of the specification, as follows.

*After the gaming environment is defined in 3-dimensions, to display a portion of the 3-D gaming environment on a display screen on the gaming machine, a “photograph” of a portion of the gaming environment is generated. The photograph is a 2-dimensional rendering of a portion of the 3-dimensional gaming environment. Transformations between 3-D coordinate systems and 2-D coordinate systems are well known in the graphical arts. The photograph may be taken from a virtual “camera” positioned at a location inside the gaming environment 100. A sequence of photographs taken by the virtual camera in the gaming environment may be considered analogous to filming a movie.*

Details related to displaying a portion of a 3-D gaming environment comprising virtual reels on a display screen are further described, for example, with respect to the specific example embodiment of FIG. 4D and on page 39:15-31 of the specification, as follows.

*FIGs. 3D-3E are diagrams showing movement patterns of a 3-D object used to display a virtual reel strip. In FIG. 3D, 8 symbols from 8 segments, 343-350, of virtual reel strip 339 (see FIG. 3A) are mapped to a 3-D object 380 which may be a cylinder as described with respect to FIG. 2. In another embodiment, the 3-D object 380 may also be an octagonal-shaped object, like a “stop” sign. The 3-D object 380 may be modeled in a 3-D gaming environment of the present invention.*

*The cylinder 380 may rotate around an axis through point 356. As rotations of the cylinder are completed, different symbols in the sequence comprising the virtual reel strip 339 may be mapped to the cylinder 380. The cylinder may be rotated 355 in a clock-wise or counter clock-wise direction in the 3-D gaming environment. Portions of the cylinder 380 may be captured by a virtual camera 338 in the 3-D gaming environment and used as part of a game outcome presentation for a game of chance played on the gaming machine. The portions of the cylinder captured depend on the position of the virtual camera. In one example, the virtual camera 338 is positioned to capture three positions of the cylinder 380. Using a cylinder with a larger radius or dividing the cylinder into more positions may be used to allow the virtual camera 338 to capture more symbols at one time.*

Additional details related to displaying a portion of a 3-D environment on a display screen are further described, for example, with respect to the specific example embodiments of FIGS. 3A-B and on pages 52:27-32 and 53:1-5 of the specification, as follows.

*As described with respect to FIGs. 3A-3B, a cylinder portion may be used to display symbols from a virtual reel strip. For instance, a virtual camera may be positioned above the top 520 of the 3-D wheel 514, such that only segments 554, 543, 544 are visible and the cylinder is a slice containing segments 353, 354, 343, 344. By rotating the cylinder through a rotation around axis 511 comprising only 1 segment at a time and then redrawing the cylinder at its initial position, then re-mapping the symbols to the cylinder segments, the cylinder portion may be used to cycle through a virtual reel strip. A similar approach may be employed for the sphere where a virtual camera is positioned in the 3-D gaming environment 510 such that the camera only captures one side of the sphere. Therefore, it may not be necessary to render the backside of the sphere in the 3-D gaming environment.*

### **Independent Claim 39**

Claim 39 describes a method of generating a game of chance in a gaming machine including a master gaming controller, a display device and a memory device. Claim 39 recites,

receiving a wager for the game of chance (**Specification, 14:7-8**) controlled by the master gaming controller on the gaming machine (**FIG. 10, reference item 250; specification, 14:5-7**) wherein the gaming machine is capable of receiving indicia of credit for the wager from an input device coupled to the gaming machine (**FIG. 7, reference items**

**24, 28, or 30; specification, 61:1-7)** and outputting indicia of credit from an output device coupled to the gaming machine; **(Specification, 4:5-9)**

determining randomly a final state on each of a plurality of virtual reel strips;

**(Specification, 64:5-6)**

for each virtual reel strip, **(Specification, 64:4-11)**

a) determining a sequence of symbols to display from the virtual reel strip **(Specification, 64:4-11)** wherein each of the sequence of symbols comprises at least one of i) a number of symbols prior to the final state on the virtual reel strip; **(Specification, 64:4-11)** ii) a number of symbols after the final state on the virtual reel strip; **(Specification, 64:4-11)** or iii) combinations thereof; **(Specification, 64:4-11)**

b) drawing the sequence of symbols over time on a surface comprising a planar rectangular surface or a curved portion of an outside of a cylinder defined in a 3-D gaming environment, **(FIGS. 3D-3G; specification 39:15-43:19)** said drawing comprising;

i) generating at least one of the planar rectangular surface **(FIG. 3F-3G; specification 41:20-25)** or the curved portion of the outside of the cylinder **(FIG. 3D-3E; specification, 36:27-32, 37:1-4, or 39:15-20)** at a first position in the 3-D gaming environment; **(FIG. 3G, t1; specification 42:7-12)** wherein the planar rectangular surface or the curved portion of the outside of the cylinder is divided into a number of segments **(FIG 3D-3G, reference items 343, 344, 345, 346, 347, 348, 349, or 350; specification, 35:18-24, 36:5-13, 36:27-32, or 37:1-4)** and wherein the number of segments is less than a total number of segments associated with the virtual reel strip; **(Specification, 37:23-31, 38:1-12, or 42:7-12)**

ii) selecting a first subset of symbols from the sequence of symbols to draw in the segments of the planar rectangular surface or the curved portion of the outside of the cylinder; **(FIG 9, reference item 612; specification, 64:7-11)**

iii) drawing the first subset of symbols in the segments of the planar rectangular surface or in the segments of the curved portion of the outside of the cylinder; **(FIG. 3G, t1 or reference item 362; specification 42:7-8)**

iv) moving the planar rectangular surface or the curved portion of the outside of the cylinder including the first subset of the sequence of symbols

from the first position to a second position in the 3-D gaming environment  
**(FIG. 3G, t2, specification 42:9-12)**

v) generating the planar rectangular surface or the curved portion of the outside of the cylinder at the first position in the 3-D gaming environment;  
**(FIG 3G, t3; specification, 42:13-18)**

vi) selecting a second subset of symbols from the sequence of symbols to draw in the segments of the planar rectangular surface or the curved portion of the outside of the cylinder; **(FIG 9, reference item 612; specification, 64:7-11)**

vii) drawing the second set of symbols in the segments of the planar rectangular surface or the segments of the curved portion of the outside of the cylinder a second subset of the sequence of symbols; **(FIG. 3G, t3; specification 41:3-7 or 42:13-16)**

viii) moving the planar rectangular surface or the curved portion of the outside of the cylinder including the second subset of the sequence of symbols from the first position to the second position in the 3-D gaming environment; **(FIG. 3G, t4; specification 42:18-21)** wherein the first subset and the second subset are defined so that when a plurality of 2-D images are rendered from the 3-D gaming environment to capture the movements of the planar rectangular surface or the curved portion of the outside of the cylinder are viewed on the display screen, the symbols drawn on the planar rectangular surface or drawn on the curved portion of the outside of the cylinder appear to enter and to leave the display screen in an order specified by the sequence of symbols determined for each virtual reel strip;  
**(Specification, 41:12-14 or 42:22-25)**

rendering the plurality of two-dimensional (2-D) images comprising the surfaces drawn with the symbols from the virtual reel strips as a game outcome presentation for the game of chance **(Specification, 24:27-32 or 25:1-3)** wherein information used to generate the surfaces and the 3-D gaming environment is stored in the memory device on the gaming machine; and **(Specification, 66:1-22)**

displaying the one or more rendered 2-D images to the display device on the gaming machine wherein the 2-D images display the sequence of symbols from each of the virtual reel strips. **(Specification, 26:9-18)**

### **Independent Claim 75**

Claim 75 describes a gaming machine. Claim 75 recites,



a housing; (**FIG. 7, reference items 4, 8, or 6; specification 58:22-32**)

a master gaming controller designed or configured to control a game of chance played on the gaming machine mounted within the housing and to execute game logic; (**FIG. 10, reference item 250; specification, 14:5-7**)

an input device coupled to the housing capable of receiving indicia of credit for wagers on the game of chance; (**FIG. 7, reference items 24, 28, or 30; specification, 61:1-7**)

an output device coupled to the housing capable of outputting indicia of credit from the gaming machine; (**FIG. 7, reference items 20 or 38; specification 63:6-9**)

a memory device coupled to the housing for storing information used to generate a 3-D gaming environment comprising one or more virtual slot reels; (**FIG. 10, reference items 56 or 251**)

game logic executed on the gaming machine for rendering one or more two-dimensional images derived from the 3-D gaming environment wherein the rendering for each virtual slot reel comprises, (**FIG. 2 or FIGS. 3D-3G, specification, 32:1-10, 37:13-22, 41:26-31, or 42:1-2**)

a) determining a sequence of symbols to display from a virtual reel strip associated with the virtual slot reel (**Specification, 64:4-11**) wherein each of the sequence of symbols comprises at least one of i) a number of symbols prior to the final state on the virtual reel strip; (**Specification, 64:4-11**) ii) a number of symbols after the final state on the virtual reel strip; (**Specification, 64:4-11**) or iii) combinations thereof; (**Specification, 64:4-11**)

b) drawing the sequence of symbols over time on a surface comprising a planar rectangular surface or a curved portion of an outside of a cylinder defined in a 3-D gaming environment, (**FIGS. 3D-3G; specification 39:15-43:19**) said drawing comprising;

i) generating at least one of the planar rectangular surface (**FIG. 3F-3G; specification 41:20-25**) or the curved portion of the outside of the cylinder (**FIG. 3D-3E; specification, 36:27-32, 37:1-4, or 39:15-20**) at a first position in the 3-D gaming environment; (**FIG. 3F, t1; specification 40:1-7, 40:15-19, or 42:7-12**) wherein the planar rectangular surface or the curved portion of the outside of the cylinder is divided into a number of segments (**FIG 3D-3G, reference items 343, 344, 345, 346, 347, 348, 349, or 350; specification, 35:18-24, 36:5-13, 36:27-32, or 37:1-4**) and wherein the

number of segments is less than a total number of segments associated with the virtual reel strip; (**Specification, 37:23-31, 38:1-12, or 42:7-12**)

ii) selecting a first subset of symbols from the sequence of symbols to draw in the segments of the planar rectangular surface or the curved portion of the outside of the cylinder; (**FIG 9, reference item 612; specification, 64:7-11**)

iii) drawing the first subset of symbols in the segments of the planar rectangular surface or in the segments of the curved portion of the outside of the cylinder; (**FIG. 3G, t1, reference item 362; specification 42:7-8**)

iv) moving the planar rectangular surface or the curved portion of the outside of the cylinder including the first subset of the sequence of symbols from the first position to a second position in the 3-D gaming environment (**FIG. 3G, t2, specification 42:9-12**)

v) generating the planar rectangular surface or the curved portion of the outside of the cylinder at the first position in the 3-D gaming environment; (**FIG 3G, t3; specification, 42:13-18**)

vi) selecting a second subset of symbols from the sequence of symbols to draw in the segments of the planar rectangular surface or the curved portion of the outside of the cylinder; (**FIG 9, reference item 612; specification, 64:7-11**)

vii) drawing the second set of symbols in the segments of the planar rectangular surface or the segments of the curved portion of the outside of the cylinder a second subset of the sequence of symbols; (**FIG. 3G, t3; specification 42:13-16**)

viii) moving the planar rectangular surface or the curved portion of the outside of the cylinder including the second subset of the sequence of symbols from the first position to the second position in the 3-D gaming environment; (**FIG. 3G, t4; specification 42:18-21**) wherein the first subset and the second subset are defined so that when a plurality of 2-D images are rendered from the 3-D gaming environment to capture the movements of the planar rectangular surface or the curved portion of the outside of the cylinder are viewed on the display screen, the symbols drawn on the planar rectangular surface or drawn on the curved portion of the outside of the cylinder appear to enter and to leave the display screen in an order specified by the sequence of

symbols determined for each virtual reel strip; (**Specification, 41:12-14 or 42:21-25**) and

one or more display devices for displaying a game outcome presentation for the game of chance comprising said rendered one or more two-dimensional images. (**FIG. 7, reference items 34 or 42; FIG. 10, reference item 34**)

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

(A) Claims 39, 41-45, 48-50, 54-57, 60-64, 66, 75-84, and 86-90 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Ellis (WO 02/32521 A1) (“Ellis”).

(B) Claims 51-53, 58-59, 65, and 85 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ellis in view of Gauselmann (U.S. Pub. No. 2004/0048657) (“Gauselmann”).

(C) Claim 60 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Ellis in view of Abbott (U.S. Patent No. 7,179,166 ) (“Abbott”).

## **VII. ARGUMENT**

The independent claims are not anticipated by Ellis for at least the following reasons.

Section VII.A argues that Ellis fails to disclose or suggest any of the operations that are recited in the claims and are related to generating the motion of a virtual reel strip. For example, claims 39 and 75 recite features related to (1) generating a virtual slot reel at a first position with a first set of symbols, (2) moving the virtual of slot reel to a second position, (3) generating a virtual slot reel again at the first position with a second set of symbols, and (4) moving the virtual slot reel again to the second position. In this way, one or more advantages associated with using a 3-D model to generate 2-D images for the presentation of a game of chance may be realized without generating a 3-D model of the entire reel or strip. Ellis fails to disclose or suggest any features related to such a method of generating the motion of a virtual reel strip.

Section VII.B argues that Ellis fails to disclose or suggest any of the features recited in the claims that are related to a 3-D gaming environment. For example, claims 39 and 75 recite features related to using a virtual 3-D gaming environment for game presentation by generating one or more 3-D surfaces modeled in the virtual 3-D gaming environment and rendering 2-D images of some portion of the virtual 3-D gaming environment. Ellis fails to disclose or suggest generating a 3-D surface modeled in a virtual 3-D gaming environment. Indeed, Ellis makes no mention of any features related to a virtual 3-D gaming environment. There is nothing in Ellis to suggest that the video of the slot reel described in Ellis is anything other than a conventional, pre-generated animation or video created using conventional techniques.

Section VII.C argues that Ellis fails to disclose or suggest rendering a plurality of two-dimensional images from a virtual 3-D gaming environment. As described in the specification, “The captured surfaces in 2-D view are defined in the 3-dimensional coordinates of the virtual 3-D gaming environment and converted to a 2-dimensional coordinate system during the capturing process.” (Page 15, lines 11-13). As discussed above, Ellis makes no mention of any features related to a 3-D gaming environment. Thus, Ellis necessarily fails to disclose or suggest rendering a plurality of 2-D images from a 3-D gaming environment, as recited in the claims. Ellis fails to disclose or suggest, for example, converting a surface defined in 3-dimensional coordinates to a 2-dimensional coordinate system.

**A) Ellis fails to disclose or suggest any of the operations related to generating the motion of the slot reel recited in claims 39 and 75.**

**1. Specific movement-related features recited in claims 39 and 75**

Claims 39 and 75 recite several features related to generating a 3-D model of a portion of a moving slot reel in a virtual 3-D gaming environment. For example, claims 39 and 75 recite features related to (1) generating a virtual slot reel at a first position with a first set of symbols, (2) moving the virtual of slot reel to a second position, (3) generating a virtual slot reel again at the first position with a second set of symbols, and (4) moving the virtual slot reel again to the second position.

In this way, one or more advantages associated with using a 3-D model to generate 2-D images for the presentation of a game of chance may be realized without generating a 3-D

model of the entire reel or strip. An advantage of generating, for example, a cylinder portion, as opposed to a full cylinder modeled in the virtual 3-D gaming environment, is that rendering a cylinder portion may be faster because it may avoid rendering many polygons defining the full cylinder that are not in view of the camera. (Page 41, lines 16-19).

For example, claim 39 recites:

i) **generating** at least one of the planar rectangular surface or the curved portion of the outside of the cylinder **at a first position** in the 3-D gaming environment; wherein the planar rectangular surface or the curved portion of the outside of the cylinder is divided into a number of segments and wherein the number of segments is less than a total number of segments associated with the virtual reel strip;

...

iv) **moving** the planar rectangular surface or the curved portion of the outside of the cylinder including the first subset of the sequence of symbols **from the first position to a second position** in the 3-D gaming environment

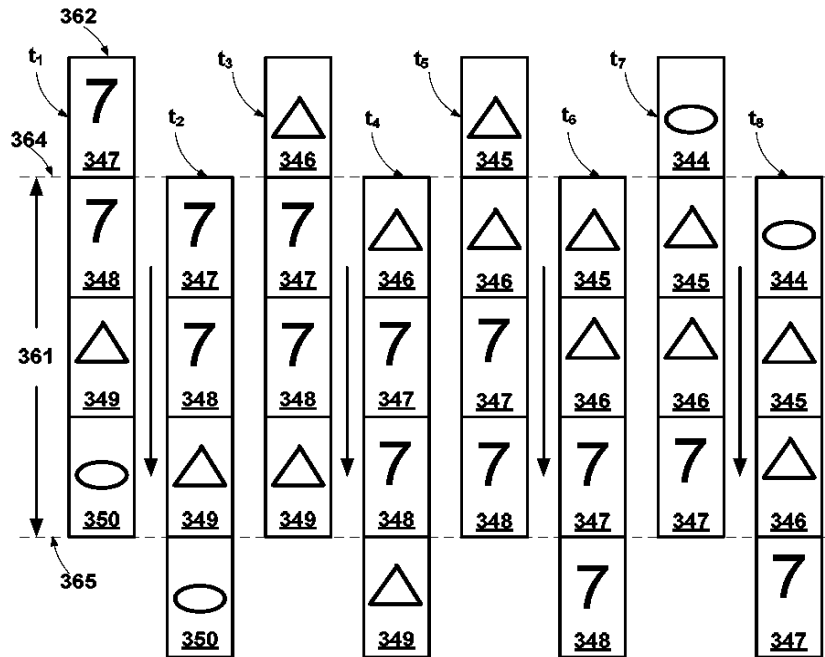
v) **generating** the planar rectangular surface or the curved portion of the outside of the cylinder at the **first position** in the 3-D gaming environment;

...

viii) **moving** the planar rectangular surface or the curved portion of the outside of the cylinder including the second subset of the sequence of symbols **from the first position to the second position** in the 3-D gaming environment; wherein the first subset and the second subset are defined so that when a plurality of 2-D images are rendered from the 3-D gaming environment to capture the movements of the planar rectangular surface or the curved portion of the outside of the cylinder are viewed on the display screen, the symbols drawn on the planar rectangular surface or drawn on the curved portion of the outside of the cylinder appear to enter and to leave the display screen in an order specified by the sequence of symbols determined for each virtual reel strip;

(Emphasis Added).

A specific example embodiment of this type of motion generation is described with respect to FIG. 3G of the application as filed, which is reproduced below.



As discussed in the application,

The symbols on the rectangular strip are described at eight times,  $t_1$ ,  $t_2$ ,  $t_3$ ,  $t_4$ ,  $t_5$ ,  $t_6$ ,  $t_7$  and  $t_8$  shown on timeline 390. . . .

At time  $t_1$ , symbols corresponding to segments 347, 348, 349 and 350 are drawn on the rectangular strip. The seven, triangle and oval are visible at this time. Between times  $t_1$  and  $t_2$ , the rectangular strip 362 is moved in a downward direction as indicated by the arrow. As the strip moves, the seven comes into view and the oval passes out of view. . . .

Between time  $t_2$  and  $t_3$ , a new set of symbols may be mapped to the rectangular strip 362. . . . At time  $t_3$ , the rectangular strip 362 is drawn with a new set of symbols corresponding to segments 346, 347, 348 and 349. Since symbol 346 is above the line 364, the appearance of the strip 362 that appears on a display screen has not changed. Between times  $t_3$  and  $t_4$ , the rectangular strip is again moved downward. During the movement, the triangle at the bottom of the strip is moved downward and out of view and a triangle appears at the top of the strip and enters into view.

By repeating the re-mapping and the movements described at times  $t_1$ ,  $t_2$ ,  $t_3$  and  $t_4$ , at times  $t_5$ ,  $t_6$ ,  $t_7$  and  $t_8$ , and rendering the visible portion of the rectangular strip to a display screen on the gaming machine, the sequence of symbols 360 may appear to be cycled through on the display of the gaming machine.

(Page 42, lines 3-25).

## **2. Movement of the slot reel from a 2D position to a 3D position in Ellis**

The Office Actions states:

1. Regarding claims 39 and 75, Ellis discloses an electronic game that initially displays a plurality of rows and columns containing a variety of symbols in two dimensions (2D) arranged to represent virtual slot reels (Abstract) in their first position. However, the reels morph or change into three dimension (3D) reels or a second position during a spin as a means to give the player an impression of a novel form of entertainment (pg. 2, par. 2, lines 1-4). In the first position the plurality of rows and

However, as discussed above, claims 39 and 75 not only recite features related to (1) generating a virtual slot reel at a first position with a first set of symbols and (2) moving the virtual of slot reel to a second position, but also features related to (3) generating a virtual slot reel again at the first position with a second set of symbols, and (4) moving the virtual slot reel again to the second position, as described in the introduction to this section. This repeated movement of a virtual slot reel from a first position to a second position with different sets of symbols causes the symbols to “appear to enter and to leave the display screen in an order specified by the sequence of symbols determined for each virtual reel strip,” as recited in claim 39.

Ellis fails to disclose or suggest any of the above-quoted features related to motion generation. Instead, Ellis describes the virtual slot reel as “morphing from a two dimensional state to a three dimensional state during execution of a spin command.” (Page 8, lines 10-12). For example, when describing FIG. 2 (reproduced below), Ellis states that “Column 9 would, prior to spinning, have the two dimensional appearance of column 11 and as spinning commences, column 9 would gradually take on the appearance of column 10 and then finally the appearance of column 9.” (Page 8, lines 12-15).

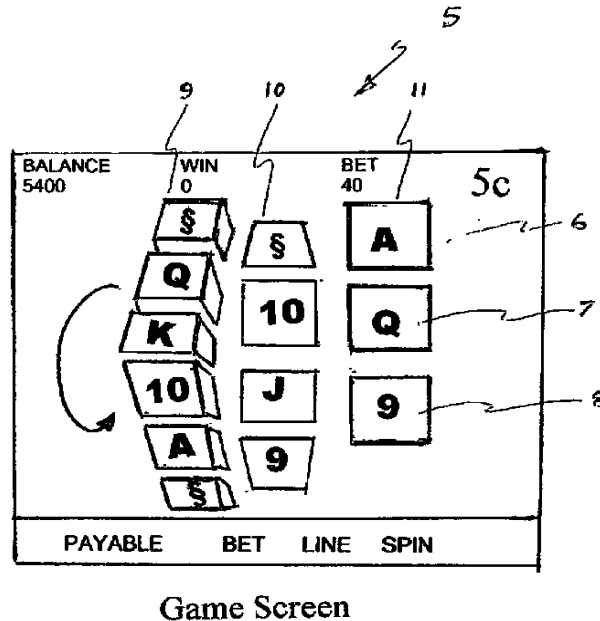


Figure 2

However, Ellis makes no mention of, for example, generating the virtual slot reel again in the first (2D) position with a **second** set of symbols and then again moving the slot reel to the second (3D) position. Ellis does not describe, for example, after morphing a virtual slot reel from the appearance of column 9 to the appearance of column 11, generating the virtual slot reel **again** with the appearance of column 9 but with a **second subset** of symbols. Further, Ellis does not describe then morphing the virtual slot reel with the second subset of symbols again to the appearance of column 11.

Further, morphing from a two dimensional state to a three dimensional state, as described in Ellis, does not cause the symbols to “appear to enter and to leave the display screen,” as recited in claim 39. As shown above with respect to FIG. 3F, at time  $t_1$  the 7 is generated but not shown. (Page 42, lines 7-11). The movement from the first position to the second position between  $t_1$  and  $t_2$  causes the 7 to come into view and the oval to move out of view. (Page 42, lines 7-11). When the virtual slot reel is generated again in the first position but with a second set of symbols, for example at  $t_3$ , the movement of the slot reel from the first position to the second position between  $t_3$  and  $t_4$  causes the upper triangle to move into view and the lower triangle to move out of view. (Page 42, lines 13-21). Morphing from a two dimensional state to a three dimensional state, as described in Ellis, does not cause the symbols to appear to enter and leave the display in this fashion. Thus, Ellis fails to disclose or



suggest features related to repeated movement from a first position to a second position that cause the symbols to “appear to enter and to leave the display screen,” as recited in claim 39.

Therefore, the discussion in Ellis of slot reels morphing from a two dimensional state to a three dimensional state fails to teach any of the above-quoted features recited in claim 39 related to motion generation. For example, Ellis fails to disclose or suggest any features related to (1) generating a virtual slot reel at a first position with a first set of symbols, (2) moving the virtual of slot reel to a second position, (3) generating a virtual slot reel again at the first position with a second set of symbols, and (4) moving the virtual slot reel again to the second position.

### **3. Rotation of the slot reel in Ellis**

In addition to stating that the slot reel morphs from a two dimensional state to a three dimensional state, Ellis also states that the slots reel in FIG. 2 of Ellis rotate or spin. (Page 8, lines 5-18). However, the spinning of the slot reel is also not analogous to the above-quoted features recited in claim 39.

Ellis fails to disclose or suggest, for example, generating a symbol on a surface that is not shown on the display initially but is then moved into view, thus creating the appearance of symbols entering and leaving the screen. As illustrated in present application in the specific example embodiment of FIG. 3F, at time  $t_1$  the 7 is generated but not shown. (Page 42, lines 7-11). The movement from the first position to the second position between  $t_1$  and  $t_2$  causes the 7 to come into view and the oval to move out of view. (Page 42, lines 7-11). When the virtual slot reel is generated again in the first position but with a second set of symbols, for example at  $t_3$ , the movement of the slot reel from the first position to the second position between  $t_3$  and  $t_4$  causes the upper triangle to move into view and the lower triangle to move out of view. (Page 42, lines 13-21).

The mere statement in Ellis that the slot reels “are capable of rotation in an essentially vertical plane” (Page 8, lines 7-8) fails to disclose or suggest any of the above-quoted features related to motion generation. Without more, there is nothing to suggest that the spinning motion in Ellis is generated using anything other than conventional techniques or is anything other than a pre-generated movie or animation. This is supported by the fact that Ellis states that “Rotations of this type in two dimensions are known.” (Page 8, lines 8-9).

Ellis provides no details as to how the motion of the spinning slot reel is generated. In particular, Ellis fails to disclose or suggest that the spinning of the slot reel involves repeated movement from a first position to a second position, as described above. Nowhere does Ellis describe, for example, generating (1) generating the slot reel in FIG. 2 of Ellis at a first position with a first set of symbols, (2) moving the slot reel to a second position, (3) generating the slot reel in FIG. 2 of Ellis again at the first position with a second set of symbols, and (4) moving the slot reel again to the second position.

Further, Ellis fails to disclose or suggest the features related to selecting a first and second subset of symbols, as recited in claim 39. Features that allow different sets of symbols to be selected by the gaming machine may permit, for example, symbols to be displayed in an order that is not fixed. Ellis fails to disclose or suggest any features related to selecting a first and second subset of symbols. For example, Ellis fails to disclose or suggest selecting a first or second subset of symbols that appears on the slot reels illustrated in FIG. 2 of Ellis.

Thus, the discussion in Ellis of slot reels spinning vertically fails to teach any of the above-quoted features recited in claim 39 related to motion generation. Ellis fails to disclose or suggest, for example, any features related to (1) generating a virtual slot reel at a first position with a first set of symbols, (2) moving the virtual of slot reel to a second position, (3) generating a virtual slot reel again at the first position with a second set of symbols, and (4) moving the virtual slot reel again to the second position.

The above-quoted features are recited in claim 39 relate to selecting and drawing symbols and generating and moving surfaces in a virtual 3-D gaming environment as part of a method of generating a game of chance by rendering and displaying a plurality of 2-D images. Ellis fails to disclose or suggest any of the above-quoted features. Ellis provides no indication that the gaming machine performs steps related to, for example, generating a surface and repeatedly moving it from a first to a second position. Indeed, there is nothing to suggest that the spinning slot reel in Ellis is anything other than a conventional, pre-generated movie or animation an object that may appear three dimensional.

#### **B) Ellis fails to disclose or suggest a 3-D gaming environment.**

Claims 39 and 75 recite several features related to using a virtual 3-D gaming environment for presenting a game of chance by generating one or more 3-D surfaces

modeled in the virtual 3-D gaming environment and rendering 2-D images of some portion of the virtual 3-D gaming environment. For example, claim 39 recites:

b) drawing the sequence of symbols over time on a surface comprising a planar rectangular surface or a curved portion of an outside of a cylinder defined in a **3-D gaming environment**, said drawing comprising;

...

iv) moving the planar rectangular surface or the curved portion of the outside of the cylinder including the first subset of the sequence of symbols from the first position to a second position in the **3-D gaming environment**

v) generating the planar rectangular surface or the curved portion of the outside of the cylinder at the first position in the **3-D gaming environment**;

...

viii) **moving** the planar rectangular surface or the curved portion of the outside of the cylinder including the second subset of the sequence of symbols from the first position to the second position in the **3-D gaming environment**; wherein the first subset and the second subset are defined so that when a plurality of 2-D images are rendered from the **3-D gaming environment** to capture the movements of the planar rectangular surface or the curved portion of the outside of the cylinder are viewed on the display screen, the symbols drawn on the planar rectangular surface or drawn on the curved portion of the outside of the cylinder appear to enter and to leave the display screen in an order specified by the sequence of symbols determined for each virtual reel strip;

(Emphasis Added).

A 3-D virtual gaming environment is described in the specification, for example on page 15, lines 5-21:

Prior to describing FIG. 1, some general aspects of 3-D virtual gaming environments and their relationship to 2-D environments are discussed. To utilize a virtual 3-D gaming environment for a game presentation or other gaming activities on a gaming machine, a 2-D view of the virtual 3-D gaming environment is rendered. The 2-D view captures some portion of the 3-D surfaces modeled in the virtual 3-D gaming environment. The captured surfaces define a 3-D object in the 3-D gaming environment. The captured surfaces in 2-D view are defined in the 3-dimensional coordinates of the virtual 3-D gaming environment and converted to a 2-dimensional coordinate system during the capturing process. As part of a game presentation, the 2-D view may be presented as a video frame on a display screen on the gaming machine. In some

ways, the two-dimensional view is analogous to a photograph of a physical 3-D environment taken by a camera where the photograph captures a portion of the physical 3-D surfaces existing in the physical 3-D environment.

Thus, a virtual 3-D gaming environment is not a conventional pre-generated animation or movie of a 3-D object. Instead, a virtual 3-D gaming environment involves 3-D surfaces modeled in a virtual 3-D gaming environment and defined in 3-dimensional coordinates. As stated in the specification on page 16, lines 19-29:

When only 2-D information about a 3-D object is available, it is not possible to generate new 2-D views from different viewpoints of the 3-D object. . . . As another example, frames from a movie may be used as part of a game presentation on a gaming machine. Each frame of the movie represents a 2-D view from a viewpoint of a camera used to film each frame. If the frame included a picture of a building viewed from the front (e.g., the viewpoint captures the front of the building), it is not possible to generate a new 2-D view of the back of the building using because information regarding the back of the building is not known.

Ellis fails to disclose or suggest a 3-D gaming environment, or any feature related to a 3-D gaming environment. There is nothing in Ellis to suggest, for example, that the slot reels illustrated in FIG. 2 of Ellis are generated in a virtual 3-D environment. Ellis does state that “the invention provides an electronic game of chance in which symbols and/or shapes carrying the symbols morph ( change) from two dimensions prior to spinning to three dimensions while spinning.” (Ellis, page 2, lines 6-8). However, Ellis provides no details as to how this animation is generated. Ellis fails to disclose or suggest, for example, objects defined in a 3-dimensional coordinate system. Ellis also makes no mention of, for example, a virtual camera positioned in the 3-D gaming environment to capture a 2-D image of some portion of the 3-D gaming environment. Ellis also fails to disclose or suggest, for example, that any 3-D information about the slot reels is stored or otherwise available, or that it is possible to generate new 2-D views of the slot reels from different viewpoints. Indeed, Ellis fails to disclose or suggest that the depiction of the slot reels described in Ellis is anything other than a conventional, pre-generated animation or movie of a 3-dimensional slot reel. Therefore, Ellis fails to disclose or suggest any of the features recited in the independent claims that are related to a 3-D gaming environment.

**C) Ellis fails to disclose or suggest rendering a plurality of two-dimensional images from a 3-D gaming environment.**

Claims 39 and 75 recite several features related to rendering a plurality of two-dimensional images from a 3-D gaming environment. For example, claim 39 recites:

wherein the first subset and the second subset are defined so that when **a plurality of 2-D images are rendered from the 3-D gaming environment** to capture the movements of the planar rectangular surface or the curved portion of the outside of the cylinder are viewed on the display screen, the symbols drawn on the planar rectangular surface or drawn on the curved portion of the outside of the cylinder appear to enter and to leave the display screen in an order specified by the sequence of symbols determined for each virtual reel strip;  
**rendering the plurality of two-dimensional (2-D) images** comprising the surfaces drawn with the symbols from the virtual reel strips as a game outcome presentation for the game of chance wherein information used to generate the surfaces and the 3-D gaming environment is stored in the memory device on the gaming machine;  
**displaying the one or more rendered 2-D images** to the display device on the gaming machine wherein the 2-D images display the sequence of symbols from each of the virtual reel strips.

(Emphasis Added).

In this way, a sequence of 2-D images of a portion or portions of the 3-D gaming environment may be captured to give the appearance of motion. As described in the specification on page 24, lines 27-32 and page 25, lines 1-3:

After the gaming environment is defined in 3-dimensions, to display a portion of the 3-D gaming environment on a display screen on the gaming machine, a “photograph” of a portion of the gaming environment is generated. **The photograph is a 2-dimensional rendering of a portion of the 3-dimensional gaming environment.** Transformations between 3-D coordinate systems and 2-D coordinate systems are well known in the graphical arts. The photograph may be taken from a virtual “camera” positioned at a location inside the gaming environment 100. A sequence of photographs taken by the virtual camera in the gaming environment may be considered analogous to filming a movie.

(Emphasis Added).

Ellis fails to disclose or suggest any feature related to a plurality of 2-D images rendered from a portion of the 3-D gaming environment. Nowhere does Ellis mention, for example, the type of transformation discussed above. As discussed in the above-quoted section of the application, a 2-D rendering of a portion of the 3-D gaming environment may be accomplished by using, for example, a transformation between a three dimensional coordinate system and a two dimensional coordinate system. In this way, a 2-dimensional “photograph” may be taken from a virtual “camera” positioned at a location inside the 3-D gaming environment. However, Ellis fails to disclose or suggest any transformation from a three dimensional coordinate system to a two dimensional coordinate system. Ellis does not suggest, for example, that images of the slot reels illustrated in FIG. 2 of Ellis are created by generating the slot reels modeled in a 3-D gaming environment and rendering a plurality of 2-D images of the slot reels.

This above-quoted features recited in claim 39 relate to using three dimensional information from the 3-D gaming environment to render a plurality of two dimensional images, which may allow, for example, two dimensional images to be rendered from different virtual camera positions. As stated in the specification on page 16, lines 19-29:

When only 2-D information about a 3-D object is available, it is not possible to generate new 2-D views from different viewpoints of the 3-D object. . . . As another example, frames from a movie may be used as part of a game presentation on a gaming machine. Each frame of the movie represents a 2-D view from a viewpoint of a camera used to film each frame. If the frame included a picture of a building viewed from the front (e.g., the viewpoint captures the front of the building), it is not possible to generate a new 2-D view of the back of the building using because information regarding the back of the building is not known.

Ellis fails to disclose or suggest any three dimensional information or coordinates. Nowhere does Ellis disclose or suggest, for example, that the slot reels illustrated in FIG. 2 of Ellis are defined in three dimensional coordinates. Further, Ellis makes no mention of any virtual camera position or any ability to generate new 2-D images from different viewpoints.

Ellis also fails to disclose or suggest any *portion* of a 3-D gaming environment. In at least one embodiment, as was discussed in Section VII.A in relation to FIG. 3F of the application as filed, a surface or part of a surface may be generated in the 3-D gaming environment during a period of time when it is not actually visible on the display. Thus, in

some embodiments, a plurality of 2-D images may be rendered that may include only a part of the 3-D gaming environment. Ellis makes no mention of such features. Ellis does not describe, for example, that any part of the slot reels illustrated in FIG. 2 of Ellis are generated but not displayed. Ellis fails to disclose or suggest, for example, any virtual camera position or any 2-D image of only a part of the slot reels.

Ellis provides no details about how the video slot reel of FIG. 2 is generated. Ellis does not disclose or suggest that the images of slot reels described in Ellis are anything other than a pre-generated, conventional movie. Thus, Ellis fails to disclose or suggest any of the above-quoted features recited in claim 39 related to rendering the plurality of two-dimensional (2-D) images.

**D) Conclusion**

Ellis thus fails to disclose or suggest any feature related to a 3D gaming environment, generating motion using a 3D gaming environment, or rendering a plurality of 2D images from a 3D gaming environment, as recited in claim 39.

Abbott and Gauselman fail to cure the deficiencies of Ellis. Abbott relates to a “reel based game that requires skill, fast reflexes, good memory, and strategy to play well.” (Abstract) Gauselmann relates to a gaming machine with selectable features, such as personality. (Abstract) Abbott and Gauselmann are not cited in the Office Action as disclosing or suggesting any feature of an independent claim. Further, neither Abbott nor Gauselmann (considered alone or in combination) disclose or suggest any of the above-quoted features lacking in Ellis.

Claim 75 recites features similar to claim 39 and is therefore not anticipated for at least the reasons set forth above. The dependent claims incorporate all of the features of the independent claims on which they are based and are therefore not anticipated for at least the reasons set forth above.

In view of the forgoing, it is respectfully submitted that none of the pending claims are anticipated or reasonably suggested by Ellis, Gauselmann, or Abbott, either alone or in combination, and that the rejections of the pending claims in the Final Office Action under are therefore erroneous. Accordingly, it is respectfully requested that the pending rejections of all claims be reversed.

Respectfully Submitted,  
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## VIII. CLAIMS APPENDIX

### CLAIMS ON APPEAL

1.-38. (Cancelled)

39. (Previously Presented) In a gaming machine including a master gaming controller, a display device and a memory device, a method of generating a game of chance, the method comprising:

receiving a wager for the game of chance controlled by the master gaming controller on the gaming machine wherein the gaming machine is capable of receiving indicia of credit for the wager from an input device coupled to the gaming machine and outputting indicia of credit from an output device coupled to the gaming machine;

determining randomly a final state on each of a plurality of virtual reel strips;  
for each virtual reel strip,

a) determining a sequence of symbols to display from the virtual reel strip wherein each of the sequence of symbols comprises at least one of i) a number of symbols prior to the final state on the virtual reel strip; ii) a number of symbols after the final state on the virtual reel strip; or iii) combinations thereof;

b) drawing the sequence of symbols over time on a surface comprising a planar rectangular surface or a curved portion of an outside of a cylinder defined in a 3-D gaming environment, said drawing comprising;

i) generating at least one of the planar rectangular surface or the curved portion of the outside of the cylinder at a first position in the 3-D gaming environment; wherein the planar rectangular surface or the curved portion of the outside of the cylinder is divided into a number of segments and wherein the number of segments is less than a total number of segments associated with the virtual reel strip;

ii) selecting a first subset of symbols from the sequence of symbols to draw in the segments of the planar rectangular surface or the curved portion of the outside of the cylinder;

iii) drawing the first subset of symbols in the segments of the planar rectangular surface or in the segments of the curved portion of the outside of the cylinder;

iv) moving the planar rectangular surface or the curved portion of the outside of the cylinder including the first subset of the sequence of symbols from the first position to a second position in the 3-D gaming environment

v) generating the planar rectangular surface or the curved portion of the outside of the cylinder at the first position in the 3-D gaming environment;

vi) selecting a second subset of symbols from the sequence of symbols to draw in the segments of the planar rectangular surface or the curved portion of the outside of the cylinder;

vii) drawing the second set of symbols in the segments of the planar rectangular surface or the segments of the curved portion of the outside of the cylinder a second subset of the sequence of symbols;

viii) moving the planar rectangular surface or the curved portion of the outside of the cylinder including the second subset of the sequence of symbols from the first position to the second position in the 3-D gaming environment; wherein the first subset and the second subset are defined so that when a plurality of 2-D images are rendered from the 3-D gaming environment to capture the movements of the planar rectangular surface or the curved portion of the outside of the cylinder are viewed on the display screen, the symbols drawn on the planar rectangular surface or drawn on the curved portion of the outside of the cylinder appear to enter and to leave the display screen in an order specified by the sequence of symbols determined for each virtual reel strip;

rendering the plurality of two-dimensional (2-D) images comprising the surfaces drawn with the symbols from the virtual reel strips as a game outcome presentation for the game of chance wherein information used to generate the surfaces and the 3-D gaming environment is stored in the memory device on the gaming machine; and

displaying the one or more rendered 2-D images to the display device on the gaming machine wherein the 2-D images display the sequence of symbols from each of the virtual reel strips.

40. (Cancelled).

41. (Original) The method of claim 39, wherein 3 virtual reel strips are mapped to three different surfaces.

42. (Original) The method of claim 39, wherein 5 virtual reel strips are mapped to five different surfaces.

43. (Original) The method of claim 39, wherein a number of symbols displayed in each game outcome presentation is a constant.

44. (Original) The method of claim 39, further comprising:  
determining a motion for each of the surfaces in the 3-D gaming environment; and,  
while rendering the plurality of 2-D images, applying the determined motion for each of the surfaces in the 3-D gaming environment wherein the motion for each of the surfaces is captured in at least a portion of the plurality of the 2-D images.

45. (Original) The method of claim 44, wherein, when the 2-D images are viewed in a sequence, the rendered symbols appear to move along a linear path from a top of the display screen to the bottom of the display screen.

46. (Cancelled).

47. (Cancelled).

48. (Original) The method of claim 39, wherein a sequence in the first subset and a sequence in the second subset overlap.

49. (Original) The method of claim 39, wherein the rate of movement of the surfaces varies over time.

50. (Original) The method of claim 39, wherein the direction of movement varies over time.

51. (Previously Presented) The method of claim 39, wherein the movement of the planar rectangular surface or the curved portion of the outside of the cylinder between the

first position and second position is specified so that a rate of movement of the symbols appears to increase and then decrease during the game outcome presentation when the plurality of 2-D images capturing the movement of the generated surfaces are viewed on the display screen.

52. (Previously Presented) The method of claim 39, wherein the movement of the planar rectangular surface or the curved portion of the outside of the cylinder between the first position and second position is specified so that the symbols on the display screen appear to oscillate above and below their final positions prior to stopping when the plurality of 2-D images capturing the movement of the generated surfaces are viewed on the display screen.

53. (Previously Presented) The method of claim 39, wherein the movement of the planar rectangular surface or the curved portion of the outside of the cylinder between the first position and second position is specified so that the symbols on the display screen, prior to moving in a first direction appear to move slightly from their initial position in a direction opposite of the first direction when the plurality of 2-D images capturing the movement of the generated surfaces are viewed on the display screen.

54. (Original) The method of claim 39, further comprising:  
dividing each surface into a number of segments and drawing at least one symbol from the sequence of symbols in each segment.

55. (Original) The method of claim 54, wherein a type of symbol drawn in each segment varies with time.

56. (Original )The method of claim 54, wherein a portion of the number is segments are viewable on the display screen at any one time when the one or more 2-D images are displayed to the display screen.

57. (Original) The method of claim 54, wherein positions of a portion of the number of segments are used to specify a payline when the one or more 2-D images are displayed to the display screen.

58. (Original) The method of claim 54, wherein, when the one or more 2-D images are displayed to the display screen, areas occupied by a portion of the number of segments on the display screen correspond to active areas of a touch screen sensor coupled to the display screen.

59. (Original) The method of claim 58, wherein the gaming machine is capable of altering a movement of a first surface in the 3-D gaming environment when an input signal is generated from an active area on the touch screen sensor above the first surface in one of the 2-D images.

60. (Original) The method of claim 39, further comprising:  
receiving an input signal from a first input device on the gaming machine indicating a stop command has been requested wherein the stop command is a request to stop a progression of symbols on one of the virtual reel strips viewed on the display screen;  
determining a new sequence of symbols to display from the virtual reel strip wherein the new sequence of symbols allows the final state of the virtual reel strip to be displayed sooner than when the stop command is not received.

61. (Original) The method of claim 39, further comprising:  
determining the award of indicia of credit using the one or more randomly selected indices wherein the gaming machine is capable of the award of the indicia of credit via the output device.

62. (Original) The method of claim 39, further comprising:  
rendering a bonus game presentation in the 3-D gaming environment and capturing the bonus game presentation on the one or more two-dimensional images.

63. (Original) The method of claim 39, further comprising:  
receiving an input signal from a first input device coupled to the gaming machine to initiate one or more games of chance.

64. (Original) The method of claim 39, wherein the sequence of symbols to display from the virtual reel strip is determined such that the sequence progresses through the virtual reel strip towards an end of the virtual reel strip.

65. (Original) The method of claim 39, wherein, when the end of the virtual reel strip is reached in the sequence and more symbols are required for the sequence, a next symbol in the sequence is selected from symbols near a beginning of the virtual reel strip and the sequence again progresses through the virtual reel strip towards the end of the virtual reel strip.

66. (Original) The method of claim 39, further comprising:  
displaying the final state for a plurality of virtual reel strips in a first game of chance;  
storing the final state of each of the virtual reel strips;  
for a second game of chance following the first game of chance,  
determining the sequence of the symbols to display from the virtual reels strips wherein the final states from the plurality of virtual reel strips from the first game of chance are initial states of the sequence of symbols for the second game of chance.

67.-74 (Cancelled)

75. (Previously Presented) A gaming machine comprising:  
a housing;  
a master gaming controller designed or configured to control a game of chance played on the gaming machine mounted within the housing and to execute game logic;  
an input device coupled to the housing capable of receiving indicia of credit for wagers on the game of chance;  
an output device coupled to the housing capable of outputting indicia of credit from the gaming machine;  
a memory device coupled to the housing for storing information used to generate a 3-D gaming environment comprising one or more virtual slot reels;  
game logic executed on the gaming machine for rendering one or more two-dimensional images derived from the 3-D gaming environment wherein the rendering for each virtual slot reel comprises,  
a) determining a sequence of symbols to display from a virtual reel strip associated with the virtual slot reel wherein each of the sequence of symbols comprises at least one of i) a number of symbols prior to the final state on the virtual

reel strip; ii) a number of symbols after the final state on the virtual reel strip; or iii) combinations thereof;

b) drawing the sequence of symbols over time on a surface comprising a planar rectangular surface or a curved portion of an outside of a cylinder defined in a 3-D gaming environment, said drawing comprising;

i) generating at least one of the planar rectangular surface or the curved portion of the outside of the cylinder at a first position in the 3-D gaming environment; wherein the planar rectangular surface or the curved portion of the outside of the cylinder is divided into a number of segments and wherein the number of segments is less than a total number of segments associated with the virtual reel strip;

ii) selecting a first subset of symbols from the sequence of symbols to draw in the segments of the planar rectangular surface or the curved portion of the outside of the cylinder;

iii) drawing the first subset of symbols in the segments of the planar rectangular surface or in the segments of the curved portion of the outside of the cylinder;

iv) moving the planar rectangular surface or the curved portion of the outside of the cylinder including the first subset of the sequence of symbols from the first position to a second position in the 3-D gaming environment

v) generating the planar rectangular surface or the curved portion of the outside of the cylinder at the first position in the 3-D gaming environment;

vi) selecting a second subset of symbols from the sequence of symbols to draw in the segments of the planar rectangular surface or the curved portion of the outside of the cylinder;

vii) drawing the second set of symbols in the segments of the planar rectangular surface or the segments of the curved portion of the outside of the cylinder a second subset of the sequence of symbols;

viii) moving the planar rectangular surface or the curved portion of the outside of the cylinder including the second subset of the sequence of symbols from the first position to the second position in the 3-D gaming environment; wherein the first subset and the second subset are defined so that when a plurality of 2-D images are rendered from the 3-D gaming environment to capture the movements of the planar rectangular surface or the curved portion

of the outside of the cylinder are viewed on the display screen, the symbols drawn on the planar rectangular surface or drawn on the curved portion of the outside of the cylinder appear to enter and to leave the display screen in an order specified by the sequence of symbols determined for each virtual reel strip; and

one or more display devices for displaying a game outcome presentation for the game of chance comprising said rendered one or more two-dimensional images.

76. (Previously Presented) The gaming machine of claim 75, further comprising: game logic for rendering the one or more 2-D images derived from the 3-D gaming environment for a bonus game outcome presentation.

77. (Original) The gaming machine of claim 75, wherein the game of chance is a video slot game.

78. (Original) The gaming machine of claim 75, further comprising: information for generating geometry of the one or more virtual slot reels in the 3-D gaming environment.

79. (Original) The gaming machine of claim 78, wherein the geometry is one of a flat strip or a curved strip.

80. (Original) The gaming machine of claim 78, further comprising: one or more virtual reel strips for mapping symbols to the one or more virtual slot reels.

81. (Previously Presented) The gaming machine of claim 80, further comprising: game logic for generating a sequence of symbols from the virtual reel strips as a function of time in the 3-D gaming environment and for rendering the 2-D images from the 3-D gaming environment comprising the sequence of symbols.

82. (Previously Presented) The gaming machine of claim 75, further comprising: game logic for generating a motion of the one or more virtual slot reels in the 3-D gaming environment wherein, when the plurality of 2-D images capturing one or more



the virtual slot reels at various positions in the 3-D gaming environment is viewed on the display screen, the virtual slot reels appear to move on the display screen.

83. (Original) The gaming machine of claim 82, wherein the symbols on each virtual slot reel appear to move along a straight line from the top of the display screen to the bottom of display screen.

84. (Original) The gaming machine of claim 75, further comprising:  
an input mechanism designed or configured to receive an input signal used to change one of a position or a movement of the one or more virtual slot reels in the 3-D gaming environment.

85. (Original) The gaming machine of claim 84, wherein the input mechanism is selected from the group consisting of a key pad, a touch screen, a mouse, a joy stick, a microphone and a track ball.

86. (Original) The gaming machine of claim 75, wherein 3 virtual slot reels and their motions are modeled in the 3-D gaming environment.

87. (Original) The gaming machine of claim 75, wherein 5 virtual slot reels and their motions are modeled in the 3-D gaming environment.

88. (Previously Presented) The gaming machine of claim 75, further comprising:  
a graphical processing unit, separate from said master gaming controller, designed or configured to execute the graphical operations used to render the one or more two-dimensional images derived from the 3-D gaming environment.

89. (Previously Presented) The gaming machine of claim 75, wherein the drawing comprises applying a texture include one or more of the symbols.

90. (Previously Presented) The method of claim 39, wherein the drawing comprises applying a texture include one or more of the symbols.

**IX. EVIDENCE APPENDIX**

NONE

**X. RELATED PROCEEDINGS APPENDIX**

NONE